

Oakland Air Route Traffic Control Center  
Fremont, California**SUBJ:** OAKLAND ARTC CENTER VOLCANIC ASH AND TRAFFIC MANAGEMENT UNIT  
PACOTS TRACK GENERATION PROCEDURES

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1. **PURPOSE.** This order establishes procedures for Volcanic Ash Information dissemination, handling airborne aircraft and generating the PACOTS Tracks when Volcanic Ash is present.
2. **DISTRIBUTION.** This order is distributed to Flight Data, Traffic Management and Oceanic personnel at Oakland Center as well as selected offices in the Western-Pacific Regional Office.
4. **BACKGROUND.** Volcanic Ash (VA) has caused engine failure on airborne aircraft and poses a serious risk to aircraft. This Order establishes procedures to be used when Volcanic Activity affects or will have an impact on Oakland ARTCC.
6. **PROCEDURES.**
  - a. When Flight Data receives Volcanic Ash Advisories (VAA) or other volcanic information, it shall immediately be distributed to the Operational Manager In Charge (OMIC).
  - b. The OMIC, as a top priority, shall determine the affected airspace and distribute the information to TMU and the affected Areas.
  - c. Volcanic Activity Contact and Information Websites are listed in Appendix 2.
  - d. If Volcanic Ash is present that indicates the current PACOTS Tracks may be affected, TMU must take the following actions:
    - (1) Plot the current affected area to determine the affected area and altitudes. Consider how the forecasted ash cloud drift (6, 12 and 18 hour forecasts) will affect traffic.
    - (2) Volcanic Ash plumes at F240 and below are not a factor for PACOTS Tracks.
    - (3) Issue a NOTAM advising of the potential risk if a PACOTS track is affected by Volcanic Ash (VA). A sample NOTAM is included in Attachment 1.
    - (4) Determine if published PACOTS tracks are affected by the VA.
      - (a) If the published PACOTS are affected consult with the Oceanic FLM.
      - (b) If aircraft for the affected PACOTS are airborne it will be necessary for the controller to issue advisories of the Ash Plume to the aircraft. This will likely cause aircraft to request re-routes away from the VA.
      - (c) If time permits, have the ATCSCC schedule a teleconference with the International Operators, Japan ATMC and Anchorage ARTCC. The telecon would ideally be at least 1 hour from the current time to allow the operators to get the correct personnel on the telecon, however timing may not permit advance notification to the operators.
      - (d) When conducting a Volcanic Ash Telecom send a High Priority email to the Oceanic Critical Event Contact List advising of the telecom details.
      - (e) On the telecom discuss the VA plume and options for managing the traffic. Get operator feedback and develop a plan.

*Note: ICAO Documents require Operators to have an SMS process in place to determine if it is safe to fly through airspace contaminated by VA.*

- (i) How will airborne aircraft be managed?
  - (ii) Do the published PACOTS need to be republished in a different location.
  - (iii) Instead of moving PACOTS Tracks an alternative is to publish an additional avoidance Track(s) and issue a NOTAM that states that certain Tracks may be affected by VA. A sample NOTAM is included in Appendix 1.
- (5) Determine if future PACOTS tracks will be affected by the VA.
- (a) Volcanic Ash plumes at F240 and below are not a factor for PACOTS Tracks.
  - (b) Determine the PACOTS Track effective times and ensure the VAA ash plume forecast covers all of the effective times of the PACOTS Track. If necessary, delay PACOTS generation until the VAA forecast covers the entire effective times of the PACOTS Tracks being generated.
  - (c) Plot the VAA to determine the affected area and altitudes.
  - (d) Determine if PACOTS to be generated are affected by the VA.
  - (f) If the PACOTS will be affected by the VA:
    - a. consult with the Oceanic FLM, and:
    - b. TMU will coordinate with the ATCSCC to schedule a telecom with the International Operators, Japan ATMC, the (VAC) and Anchorage ARTCC. The telecom would ideally be at least 1 hour from the current time to allow the operators to get the correct personnel on the telecom.
    - c. When conducting a Volcanic Ash Telecom TMU will send a High Priority email to the Oceanic Critical Event Contact List advising of the telecom details.
  - (g) On the telecom discuss the VA plume and options for managing the traffic. If the determination is made that the PACOTS Tracks will be affected, suggest on the telecom that Oakland will generate the PACOTS Tracks 25 nm clear of the VAA forecast. Get operator feedback on the proposed plan and attempt to develop a consensus plan.

*Note: ICAO Documents require Operators to have an SMS process in place to determine if it is safe to fly through airspace contaminated by VA.*

## Appendix 1

*ATTN AIRCRAFT OPERATORS AND FLIGHT DISPATCHERS. DUE TO SHEVELUCH VOLCANIC ACTIVITY AIRCRAFT TRANSITING BETWEEN NORTH AMERICA AND JAPAN/ASIA SHOULD USE SMS PROCESS TO DETERMINE WHETHER TO USE PUBLISHED PACOTS TRACKS C, E, F OR M FOR PACIFIC OCEAN CROSSING. AN ALTERNATE TRACK G HAS BEEN PUBLISHED WHICH AVOIDS CURRENT FORECAST FOR ASH CLOUD MOVEMENT. OPERATORS MAY ALSO ELECT TO FLY A USER PREFERRED ROUTE IN PLACE OF A PACOTS TRACK. QUESTIONS REGARDING FLIGHT PLANNED ROUTES CAN BE DIRECTED TO THE OAKLAND OCEANIC SUPERVISOR AT (510) 745-3342*

## **VOLCANIC POINTS OF CONTACT AND WEB ADDRESSES**

### **AVO PHONE NUMBERS:**

24 Hour Access: 907-786-7497

AVO Duty Scientist: 907-632-2275

AVO Scientist-In-Charge 907-786-7488

### **VOLCANO INFORMATION WEBSITES:**

SIGMET/AIRMET Information: <http://aawu.arh.noaa.gov/>

NOTAM Information: <https://www.notams.faa.gov/>

PIREP Information: <http://aawu.arh.noaa.gov/index.php?tab=4&hour=3>

Anchorage VAAC: <http://vaac.arh.noaa.gov/>

Alaska Volcano Observatory: <http://www.avo.alaska.edu/>

Ash Fall and Marine Advisories: <http://cwsu.arh.noaa.gov/>

HYSPLIT Trajectories: [http://ready.arl.noaa.gov/READY\\_traj\\_alaska.php](http://ready.arl.noaa.gov/READY_traj_alaska.php)  
(Alaska Volcanoes)

Temporary Flight Restrictions: <http://tfr.faa.gov/tfr2/list.jsp>

PUFF Model: <http://avo-volcview.wr.usgs.gov/puff/main.pl>

KVERT (Current Volcanic Activity): [http://www.kscnet.ru/ivs/kvert/index\\_eng.php](http://www.kscnet.ru/ivs/kvert/index_eng.php)

NOAA Satellite & Information Service: <http://www.ssd.noaa.gov/VAAC/kamchatka.html>  
(Split Window Loops/Kamchatka)

NOAA Satellite & Information Service: <http://www.ssd.noaa.gov/VAAC/ALEUT/SPLIT/splitloop.html>  
(Split Window Loops/Aleutians)

NOAA Satellite & Information Service: <http://www.ssd.noaa.gov/VAAC/aleut.html>  
(Aleutian Islands Volcano Watch)

NOAA Satellite & Information Service: <http://www.ssd.noaa.gov/VAAC/kamchatka.html>  
(Kamchatka Volcano Watch)

Volcanic Ash Transport & Dispersion: <http://www.arl.noaa.gov/ready/ash.html>  
(VAFTAD)

Tokyo VAAC: <http://ds.data.jma.go.jp/svd/vaac/data/index.html>

Washington VAAC: <http://www.ssd.noaa.gov/VAAC/washington.html>